

A NEW FORM OF SASSAFRAS FROM LONG ISLAND

Fred W. Oswald

SASSAFRAS ALBIDUM f. MOLDENKEI Oswald, f. nov.

Haec forma a forma typica speciei foliis maturitate subtus sericeo-pubescentibus et sarmentis glabris lucide rubro-purpureis juventute glaucis recedit.

This form differs from the typical form of the species in that its leaves are silky-pubescent beneath when fully mature, while the twigs are glabrous, glaucous when young, and bright red-purple.

Sassafras albidum (Nutt.) Nees has leaves which are glabrous, or essentially so, when young, and the twigs green or brown, while S. albidum var. molle (Raf.) Fern. has the leaves silky-pubescent beneath when fully mature and the twigs green or brown and closely pubescent or puberulent.

The new form was collected by myself on September 28, 1960, in the Conservation Area of the Hoyt Farm Scout Camp, Commack, Suffolk County, Long Island, New York, and the type specimen is deposited in the H. N. Moldenke Herbarium at Yonkers, New York.

This tree is named in honor of Harold Norman Moldenke (1909--), Director of the Trailside Museum in the Watchung Reservation and Supervisor of Nature Activities for the Union County, N. J., Park Commission, as a token of appreciation for his work in greatly furthering public interest, through all available media, in the wonders and beauties of nature and in their conservation, so vital for the continued preservation of our country's natural resources.

MATERIALS TOWARD A MONOGRAPH OF THE GENUS DIPYRENA

Harold N. Moldenke

This is the twenty-sixth in my series of works of monographic nature on the genera of Verbenaceae, Avicenniaceae, Stilbaceae, and Symphoremaceae. Previous genera so treated were Aegiphila Jacq., Amasonia L. f., Avicennia L., Baillonia Bocq., Bouchea Cham., Casselia Nees & Mart., Castelia Cav., Chascanum E. Mey., Citharexylum B. Juss., Cornutia Plum., Diostea Miers, Hierobotana Briq., Parodianthus Troncoso, Petitia Jacq., Petrea Houst., Priva Adans., Pseudocarpidium Millsp., Recordia Moldenke, Rehdera Moldenke, Rhaphithamnus Miers, Stylodon Raf., Svensonia Moldenke, Tectona L. f., Vitex Tourn., and the New World and cultivated members of the genus Callicarpa L.

Full explanation of the abbreviations employed herein for the names of the 255 herbaria whose material was examined, in whole

or in part, in the preparation of these works will be found in *Phytologia* 5: 154--159 (1955), 6: 242 (1958), and 7: 91--92 (1959) 123--124 & 293 (1960).

DIPYRENA Hook., *Bot. Misc.* 1: [355]. 1830.

Synonymy: *Wilsonia* Gill. & Hook. in Hook., *Bot. Misc.* 1: 172--173, pl. 49. 1829 [not *Wilsonia* R. Br., 1810]. *Wilsonia* Hook. & Arn. ex F. Phil., *Cat. Pl. Vasc. Chil.* 217, in syn. 1881.

Literature: R. Br., *Prodr. Fl. Nov. Holl.*, ed. 1, 1: 490. 1810; *Ann. des Sc. Nat.* 18: *Rév. Bibl.* 70. 1829; Hook., *Bot. Misc.* 1: 172--173, pl. 49 (1829) and 1: [355]--356. 1830; Endl., *Gen. Pl.* 1: 634. 1838; Meisn., *Pl. Vasc. Gen.* 1: 290 and 2: 199. 1839; Schau. in A. DC., *Prodr.* 11: 535 & 544. 1847; C. Gay, *Hist. Fis. Chile Bot.* 5: 24--25. 1849; R. A. Phil., *Linnaea* 29: 21--22. 1857; Bocq., *Adansonia* 3: 212. 1863; Bocq., *Rév. Groupe Verbénac.* 116, pl. 18. 1863; R. A. Phil., *Anal. Univ. Chil.* 35: 193. 1870; Benth. in Benth. & Hook. f., *Gen. Pl.* 2 (2): 1146. 1876; F. Phil., *Cat. Pl. Vasc. Chil.* 217. 1881; Jacks., *Ind. Kew.* 1: 777 (1893), 2: 628 (1894), and 2: 1231. 1895; Briq. in Engl. & Prantl, *Nat. Pflanzenfam.* 4 (3a): 156. 1894; Sanzin, *Anal. Soc. Cient. Argent.* 88: 105--106, fig. 9. 1919; Stapf, *Ind. Lond.* 2: 510 (1930), 5: 285 (1931), and 6: 495. 1931; Junell, *Symb. Bot. Upsal.* 4: 42--43, pl. 1, fig. 3. 1934; Moldenke in Fedde, *Repert.* 41: 62. 1936; H. S. Marshall, *Kew Bull.* 1936: 87. 1936; Moldenke, *Geogr. Distrib. Avicenn.* 1 & 29. 1939; Moldenke in Fedde, *Repert.* 46: 20. 1939; Moldenke, *Prelim. Alph. List Invalid Names* 24, 38, & 54. 1940; Moldenke, *Lilloa* 5: 389--390. 1940; Moldenke, *Suppl. List Invalid Names* 11. 1941; Moldenke, *Known Geogr. Distrib. Verbenac.*, [ed. 1], 43 & 92. 1942; Moldenke, *Alph. List Invalid Names* 23, 39, & 57. 1942; Covas & Schnack, *Darwiniana* 7: 85 & 89. 1945; Moldenke, *Alph. List Cit.* 1: 235 (1946) and 2: 358, 408, 441, 598, & 613. 1948; H. N. & A. L. Moldenke, *Pl. Life* 2: 23, 24, 31, & 43. 1948; Moldenke, *Known Geogr. Distrib. Verbenac.*, [ed. 2], 103 & 185. 1949; Moldenke, *Alph. List Cit.* 3: 730, 772, 809, 812, & 857. 1949; J. H. Hunziker, *Revist. Invest. Agric.* 6 (2): 192. 1952; Moldenke, *Résumé* 123, 278, 340, 393, 407, & 454. 1959.

Rigid and erect woody shrubs, branched, often glabrous throughout; leaves small, alternate or scattered, sessile or subsessile, deciduous, often fascicled at the nodes, linear-spatulate, entire, rather thick-textured, acute or obtuse, nigrescent in drying; inflorescence terminal, indeterminate (racemose), spicate or racemiform, rather dense, centripetal; flowers very short-pedicellate, borne in the axils of small linear bractlets, hypogynous, complete, perfect; prophylla very tiny or absent; calyx small, gamosepalous, tubular-campanulate, slightly zygomorphic, rather thick-textured, 5-dentate or shortly 5-fid during anthesis, later more deeply so, the posterior lobe smaller; corolla gamopetalous, zygomorphic, infundibular, its tube elongate, cylindrical, often incurved, slightly ampliate above, the limb obliquely spreading, sub-bilabiate, the posterior lip exterior and deeply 2-fid, the anterior lip 3-parted, all the lobes rather

broad, somewhat unequal or the lateral ones somewhat smaller; stamens 4, didynamous, inserted above the middle of the corolla-tube, slightly exserted; anthers ovate-oblong, not appendaged, with parallel thecae; pistil single, compound; style clavate at the apex; stigma obliquely dilated; ovary 4-celled, each cell 1-ovulate, made up of two 2-celled carpels, surrounded by a glandular disk at the base; fruit drupaceous, subglobose, fleshy, not surpassing the mouth of the fruiting-calyx and not enclosed completely by it, splitting into two 2-celled and 2-seeded, plano-convex and smooth pyrenes; seeds erect, without endosperm; radicle inferior.

This is a very distinct monotypic genus known only from the provinces of Mendoza and San Juan, Argentina. The type species is Wilsonia glaberrima Gill. & Hook. [= Dipyrena glaberrima (Gill. & Hook.) Hook.]. A common name in Spanish proposed for the group by Gay is "dipirena". It is a genus obviously related to Priva Adans. and Castelia Cav., both of which genera, however, differ in being herbaceous, with larger decussate-opposite leaves, and fruit that is completely enclosed by the cucullate mature fruiting-calyx. Bocquillon actually united Dipyrena with Priva.

The original publication of Dipyrena by Hooker is mis-quoted by Schauer in A. DC., Prodr. 11: 535 (1847) where he says "Dipyrena Hook. bot. misc. 1 p. 365. non R. Br. Endl. gen. n. 3689." This is erroneous -- the page number should be "355", and there is no genus Dipyrena of Robert Brown. What Schauer obviously intended was to place the phrase "non R. Br." after the "Wilsonia Hook. et Gill. *ibid.* p. 172, tab. 49" synonym.

The following are excluded species:

Dipyrena dentata R. A. Phil. = Diostea juncea (Gill. & Hook.)

Miers

Dipyrena glaberrima Walp. = Junellia aspera (Gill. & Hook.) Moldenke

Dipyrena valdiviana R. A. Phil. = Diostea juncea (Gill. & Hook.)

Miers

The date "1829" for Wilsonia Gill. & Hook. is apparently correct -- see Ann. des Sc. Nat. 18: Rev. Bibl. 70 (1829) -- but the index page 355 on which the name Dipyrena was proposed is correctly dated "1830". The Camfield 25022, distributed as this species, is actually Wilsonia backhousii Hook. f. in the Convulvaceae.

DIPYRENA GLABERRIMA (Gill. & Hook.) Hook., Bot. Misc. 1: [355] & 356. 1830 [not D. glaberrima Walp., 1843].

Synonymy: Wilsonia glaberrima Gill. & Hook. in Hook., Bot. Misc. 1: 173, pl. 49. 1829. Dipyrena wilsonia Hook. ex C. Gay, Hist. Fis. Chile Bot. 5: 25, in syn. 1849. Priva glaberrima (Gill. & Hook.) Bocq., Adansonia 3: 212 [Rév. Groupe Verbénac. 116, pl. 18]. 1863. Dipyrena glaberrima Hook. ex Bocq., Adansonia 3: 212, in syn. 1863. Dipyrena wilsonia Hook. & Arn. ex F. Phil., Cat. Pl.

Vasc. Chil. 217, sphalm. 1881. *Dipyrena wilsonia* F. Phil. apud Jacks., Ind. Kew. 1: 777, in syn. 1893. *Dipyrena gratissima* Gill. & Hook. ex Moldenke, Prelim. Alph. List Invalid Names 24, in syn. 1940. *Dipyrena glaberrima* Gill. & Hook. ex Moldenke, Résumé 278, in syn. 1959. *Verbena glaberrima* Gill. & Hook. ex Moldenke, Résumé Suppl. 2: 11, in syn. 1960.

Literature: see under *Dipyrena* as a genus.

Illustrations: Hook., Bot. Misc. 1: pl. 49. 1829; Bocq., Rév. Groupe Verbénac. pl. 18. 1863; Sanzin, Anal. Soc. Cient. Argent. 88: 105--106, fig. 9. 1919; Junell, Symb. Bot. Upsal. 4: pl. 1, fig. 3. 1934.

Low tree or erect woody shrub, to 2.5 m. tall, erect, branched, often glabrous throughout, with the aspect of *Junellia aspera*; branches and branchlets short, slender, gray, very leafy, subspinescent at the apex, glabrate or obscurely pulverulent, puberulent-pilose on the top of the spurs; principal internodes abbreviated, 3--10 mm. long; leaves scattered-alternate on the twigs and young branchlets, borne in fascicles of 4--10 on short and broad spurs 0.5--1.5 mm. long, especially on younger branches, small, deciduous, sessile or subsessile; leaf-blades thick and rather fleshy when fresh, chartaceous and brittle when dried, uniformly dark-green on both surfaces, often brunnescent or nigrescent in drying, narrowly oblanceolate to oblong-spatulate or linear-spatulate, 4--17 mm. long, 1--3 mm. wide, acute or obtuse at the apex, long-attenuate to the very narrow base, entire, glabrous on both surfaces, sometimes slightly revolute along the margins, 1-nerved; midrib and other venation indiscernible or practically so on both surfaces; inflorescence terminal, indeterminate (racemose), spicate or racemiform, usually terminating each twig, centripetal, rather dense; racemes often subspicoid, 2.5--5 cm. long, many-flowered, the flowers alternate or sub-opposite, hypogynous, complete, perfect, fragrant, loosely congested, borne on very slender pedicels about 1 mm. long in the axils of small linear bractlets; peduncle and rachis continuous with the adjacent twig and similar in all respects but more slender, glabrous, brownish or stramineous; sympodia much abbreviated, usually 1--3 mm. long; lower bracts foliaceous; prophylla very tiny or absent; calyx small, gamosepalous, tubular-campanulate or oblong-cylindric, slightly zygomorphic, rather thick-textured, 5-dentate or shortly 5-fid during anthesis, later more deeply so, the posterior lobe or tooth smaller than the rest; corolla gamopetalous, zygomorphic, infundibular, about 4 times as long as the calyx, varying from pale-yellowish or yellowish-white to cream-yellow, cream, waxy-cream, or white, its tube elongate, cylindric, often incurved, slightly ampliate above, the limb obliquely spreading, sub-bilabiate, the posterior lip exterior and deeply 2-fid, the anterior lip 3-parted, all the lobes rather broad, somewhat unequal or the lateral ones somewhat smaller; stamens 4, didynamous, inserted above the middle of the corolla-tube, slightly exserted; anthers ovate-oblong, not appendaged, with parallel thecae; pistil single, compound; style fil-

form, clavate at the apex; stigma obliquely dilated or lateral; ovary 4-celled, each cell 1-ovulate, made up of two 2-celled carpels, surrounded by a glandular disk at the base; fruiting-calyx open at the apex, not cucullate; fruit green when young and fresh, black when dry, drupaceous, subglobose or oval, fleshy, not surpassing the mouth of the fruiting-calyx and not enclosed completely by it, splitting into two 2-celled and 2-seeded plano-convex and smooth pyrenes; seeds erect, without endosperm; radicle inferior.

The type of this distinct species was collected by John Gillies in the valleys of the Uspallata range of mountains near Mendoza, Argentina, at an altitude of 5000 to 6000 feet, in 1821 or 1822, and is deposited in the herbarium of the Royal Botanic Gardens at Kew. There is a fine pencil sketch of the flowers and fruit on the type sheet. An isotype bears the legend "Near Villavicencio - Feby. 28. 1821" and another says "Cerro Bayo near Mendoza - Dec. 3, 1822. Frequent in all the valleys along the earlier part of the Cordillera near Mendoza." The species was also collected by Gillies near San Pedro on November 13, 1824, and at Mendoza in 1825. The species is known only from the eastern slope of the Andean Cordillera in the provinces of Mendoza and San Juan, at altitudes of 1200 to 2700 meters. It has been collected in rocky canyons, rocky ground, and quebradas, on mountains, and along highways in granitic soil. It has been collected in anthesis from October to April, and in fruit in February and December. Semper reports it as rare.

The length of the pistil in relation to the size of pollen-grains is discussed by Covas and Schnack in *Darwiniana* 7: 85 & 89 (1945). According to Junell, its ovary structure is exactly the same as that seen in Priva lappulacea (L.) Pers. He also states that he has seen a micropylar haustorium of at least 8 cells in length in one of his cross-sections.

Herbarium material has been misidentified and distributed as Junellia asparagoides (Gill. & Hook.) Moldenke and as "Janellia asparagoides (Gill. ex H. & A.) Moldenke". According to Schauer in A. DC., *Prodr.* 11: 544 (1847) the Dipyrena glaberrima of Walpers, *Act. Acad. Nat. Cur.* 19: Suppl. 1: 379 is Junellia aspera (Gill. & Hook.) Moldenke.

The date for the original publication of Wilsonia glaberrima is erroneously given as "1830" by Jackson in the "Index Kewensis" [cfr. *Ann. de Sc. Nat.* 18: Rév. Bibl. 70 (1829) and H. S. Marshall, *Kew Bull.* 1936: 87 (1936)], where the original publication of Dipyrena glaberrima is also erroneously given as page "172". Stapf cites the illustration in Hook., *Bot. Misc.* as "1830".

In all, 47 herbarium specimens, including the types of all the names involved, and 5 mounted photographs have been examined.

Citations: ARGENTINA: Mendoza: F. A. Barkley 19Ar951 (N, Ug); Bodenbender 71 [F. Kurtz 10013; Herb. Osten 13022] (Ug); Burkart, Troncoso, & Nicora 14241 (N); Cáceres & Paci 283 (N, N); Carette s.n. [Rufz Leal 2562] (N); Gillies 1 (Bm, N—photo), s.n. [in the

valleys of the Uspallata range of mountains toward Mendoza] (Ed--isotype, K--type, K--isotype, Lu--isotype, N--isotype, N--photo of type, Z--photo of type), s.n. [near San Isidro, Nov. 13, 1824] (K), s.n. [Mendoza, 1825] (G, K), s.n. [Baths of Villa Vicencio] (G); Herb. Ledebour s.n. [Mendoza] (L); Jürgensen 185 (Cp, Cp); D. O. King 141 (Bm); Mexia 4390 (Ca--560639, G, N--photo, Z--photo); Nicora 4347 (N); Perez Moreau s.n. [Herb. Mus. Argent. Cienc. Nat. 12705] (N); R. A. Philippi s.n. [Andes Mendocinae] (B, B, B, Cb, N, P, V), s.n. [Cordillera de Mendoza] (V); Rimbach 18 (L); Ruiz Leal 1044 (N), 4372 (N), 4794 (N); Sanzin 226 [Herb. Osten 12822] (Ug); Semper 245 (S), s.n. [Ruiz Leal 4135] (N), s.n. [Ruiz Leal 4224] (N), s.n. [Ruiz Leal 10220] (N); Sparre 1496 (S); Spegazzini 11878 (Ca--882457); E. Wall 5, in part (Ew, Ew). San Juan: Saile Echegaray s.n. [Leoncito, I. 1876] (B).

MATERIALS TOWARD A MONOGRAPH OF THE GENUS ACANTHOLIPPIA

Harold N. Moldenke

This is the twenty-seventh in my series of works of monographic nature on the genera of Verbenaceae, Avicenniaceae, Stilbaceae, and Symphoremaceae. Previous genera so treated were Aegiphila Jacq., Amasonia L. f., Avicennia L., Baillonia Bocq., Bouchea Cham., Casselia Nees & Mart., Castelia Cav., Chascanum E. Mey., Citharexylum B. Juss., Cornutia Plum., Diostea Miers, Dipyrena Hook., Hierobotana Briq., Parodianthus Troncoso, Petitia Jacq., Petrea Houst., Priva Adans., Pseudocarpidium Millsp., Recordia Moldenke, Rehdera Moldenke, Rhaphithamnus Miers, Stylodon Raf., Svensonia Moldenke, Tectona L. f., Vitex Tourn., and the New World and cultivated members of Callicarpa L.

Full explanation of the abbreviations employed herein for the names of the 255 herbaria whose material was examined, in whole or in part, in the preparation of these works will be found in Phytologia 5: 154--159 (1955), 6: 242 (1958), and 7: 91--92 (1959), 123--124 & 293 (1960).

ACANTHOLIPPIA Griseb., Abh. K. Gesell. Wiss. Götting. 19: 244 [Pl. Lorentz. 196]. 1874.

Literature: C. Gay, Hist. Fis. Chile Bot. 5: 29--30. 1849; R. A. Phil., Fl. Atac. 40. 1860; A. Gray, Proc. Am. Acad. 6: 49--50. 1862; R. A. Phil., Anal. Univ. Chile 27: 350. 1865; R. A. Phil., Anal. Univ. Chile 36: 192--193 [Sert. Mendoc. Alt. 34]. 1870; Griseb., Abh. K. Gesell. Wiss. Götting. 19: 244--245 [Pl. Lorentz. 196--197]. 1874; Benth. in Benth. & Hook., Gen. Pl. 2: 1143. 1876; Griseb., Abh. K. Gesell. Wiss. Götting. 24: [Symb.